



3743

Patent
Docket No.: 655.00947

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Amdr
q/a

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant: Stephen Memory; C. James)
Rogers Gregory G. Hughes, Frank M. Grippe,) For: SPLIT FIN FOR A
Rif Cheema, William Markusen and) HEAT EXCHANGER
Kenneth Ritt)
Serial No.: 10/020,782) Group Art Unit: 3743
Filed: December 12, 2001) Examiner: Tho V. Duong

AMENDMENT A

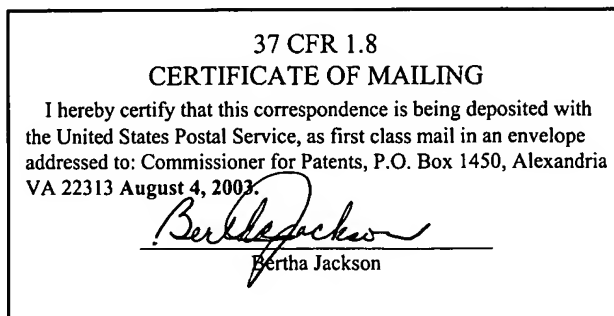
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA . 22313-1450

AUG 1 2 2003
TECHNOLOGY CENTER R3700

Sir:

In response to the Office Action dated May 6, 2003 (Paper No. 7), Applicants
amend and responds as follows:



1. (currently amended) In a heat exchanger having a front and a back, a plurality
2 of spaced rows of flattened tubes from front to back and defining aligned tube runs in each
row, and fins abutted to adjacent tube runs in each row and extending from front to back
so that each fin is common to each of said rows and having heat flow interrupters in each
5 fin at a location in the space between the aligned tube runs in each row, the improvement
wherein each said heat flow interrupter is defined by a slit extending completely through
the fin and is characterized by the absence of the removal of any material of which the fin
8 is made at the slit, and each edge of each slit is not displaced with respect to the
opposite edge of the slit.

A.
2. (withdrawn)

3. (withdrawn)

4. (withdrawn)

5. (withdrawn)

6. (withdrawn)

7. (withdrawn)

8. (original) In a heat exchanger having a front and a back, a plurality of spaced
rows of flattened tubes from front to back and defining aligned tube runs in each row, and
serpentine fins abutted to adjacent tube runs in each row and extending from front to back
so that each fin is common to each of said rows and having heat flow interrupters in each
fin at a location in the space between the aligned tube runs in each row, the improvement
wherein each said heat flow interrupter is defined by a slit extending completely through
the fin and is characterized by the absence of the removal of any material of which the fin
is made at the slit, the aligned ones of said tube runs being connected in hydraulic series.

9. (withdrawn)

10. (withdrawn)

11. (withdrawn)

12. (withdrawn)

13. (original) In a refrigeration system containing a transcritical refrigerant, a
compressor for compressing the refrigerant, an evaporator connected to an inlet of the
compressor and for evaporating the refrigerant, and a gas cooler for receiving compressed
refrigerant from the compressor, cooling the same and discharging the cooled refrigerant

to the evaporator, the improvement wherein the gas cooler comprises a heat exchanger
6 having a front and a back, a plurality of spaced rows of flattened tubes from front to back
and defining aligned tube runs in each row, and serpentine fins abutted to adjacent tube
8 runs in each row and extending from front to back so that each fin is common to each of
said rows and having heat flow interrupters in each fin at a location in the space between
10 the aligned tube runs in each row, the improvement wherein each said heat flow interrupter
is defined by a slit extending completely through the fin and is characterized by the
12 absence of the removal of any material of which the fin is made at the slit.

Alt
14. (withdrawn)

15. (withdrawn)

16. (withdrawn)

17. (withdrawn)

18. (withdrawn)

19. (withdrawn)

20. (original) The refrigeration system of claim 13 wherein said system is a heat pump system wherein said evaporator is also a gas cooler and said gas cooler is also an evaporator.

21 (new) The heat exchanger of claim 1 wherein said fins are serpentine fins.

22. (new) In a heat exchanger having a front and back, a plurality of spaced rows of tubes from front to back and defining aligned tube runs in each row, and fins abutted to adjacent tube runs in each row and extending from front to back so that each fin is common to each of said rows and having heat flow interrupters in each fin at a location in the space between the aligned tube runs in each row, the improvement wherein each said heat flow interrupters is defined by a slit extending completely through the fin and is characterized by the absence of the removal of any material of which the fin is made at the slit, and each edge of each slit is not displaced with respect to the opposite edge of the slit.

23. (new) In a heat exchanger having a front and a back, a plurality of spaced rows of tubes from front to back and defining aligned tube runs in each row, and fins abutted to adjacent tube runs in each row and extending from front to back so that each fin is common to each of said rows and having heat flow interrupters in each fin at a

location in the space between the aligned tube runs in each row, the improvement wherein each said heat flow interrupter is defined by a slit extending completely through the fin and is characterized by the absence of the removal of any material of which the fin is made at the slit, the aligned ones of said tube runs being connected in hydraulic series.
